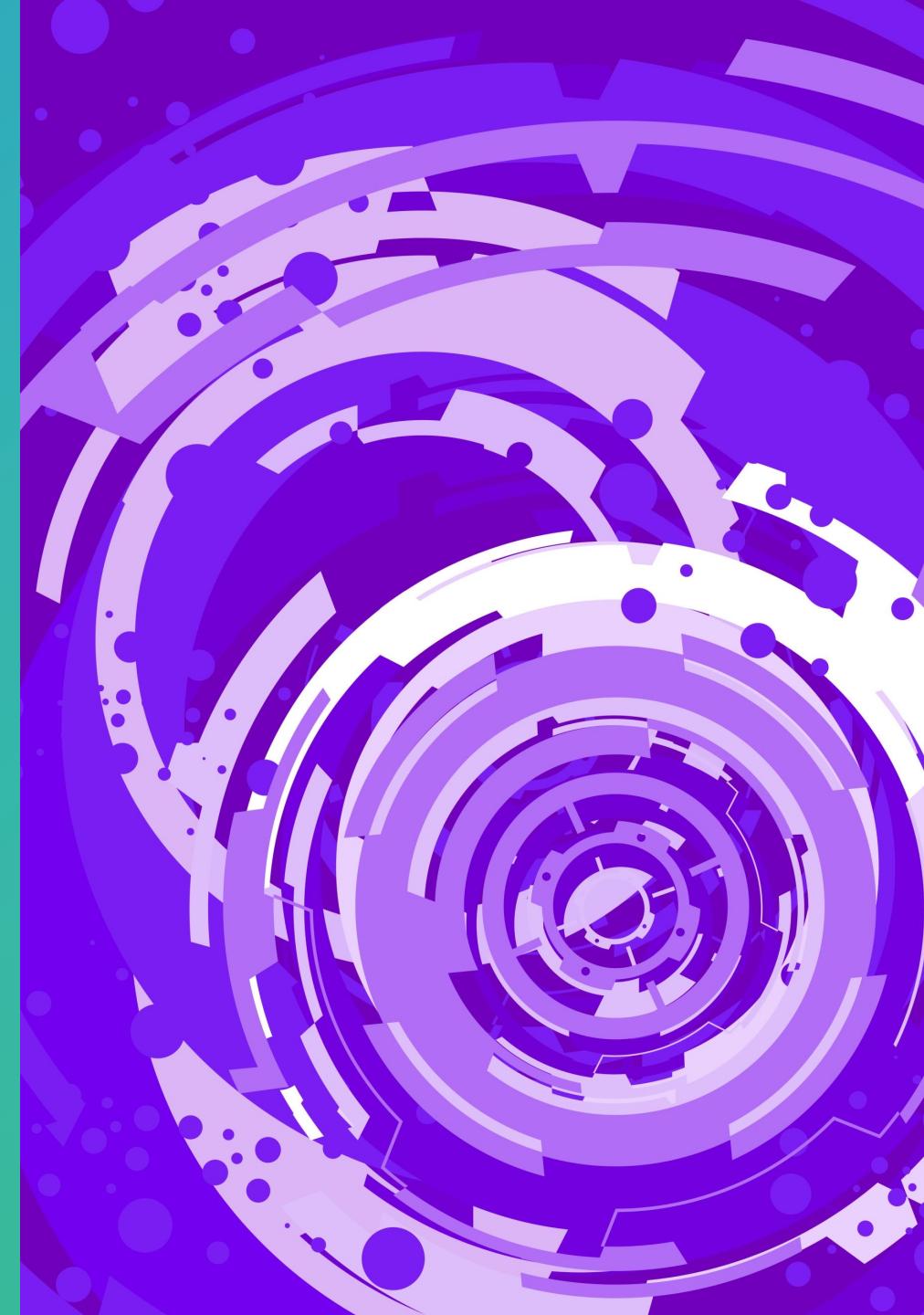


# URBAN GEOGRAPHIC INFORMATION SYSTEM

**Course Intro.**

**Chun-Hsiang Chan**

Department of Geography,  
National Taiwan Normal University



# Outline

- About CCH
- Course Intro
- Grading Policy
- Why do you need to take this course?
- What will you learn from this course?
- Question Time

# About CCH

現職:

國立臺灣師範大學地理系 助理教授

主要經歷:

中原大學智慧運算與大數據學士班/碩士學位學程 助理教授

台灣資安鑄造股份有限公司 人工智慧分析顧問

臺北醫學大學醫學系放射線學科 博士後研究員

臺北市立萬芳醫院影像醫學部 博士後研究員

中央研究院社會學研究所 兼任資料分析師

資訊工業策進會資安科技研究所 工程師

國家災害防救科技中心坡地組 實習生

國立臺灣大學化學系 專題生

學歷:

國立臺灣大學地理環境資源學系 博士

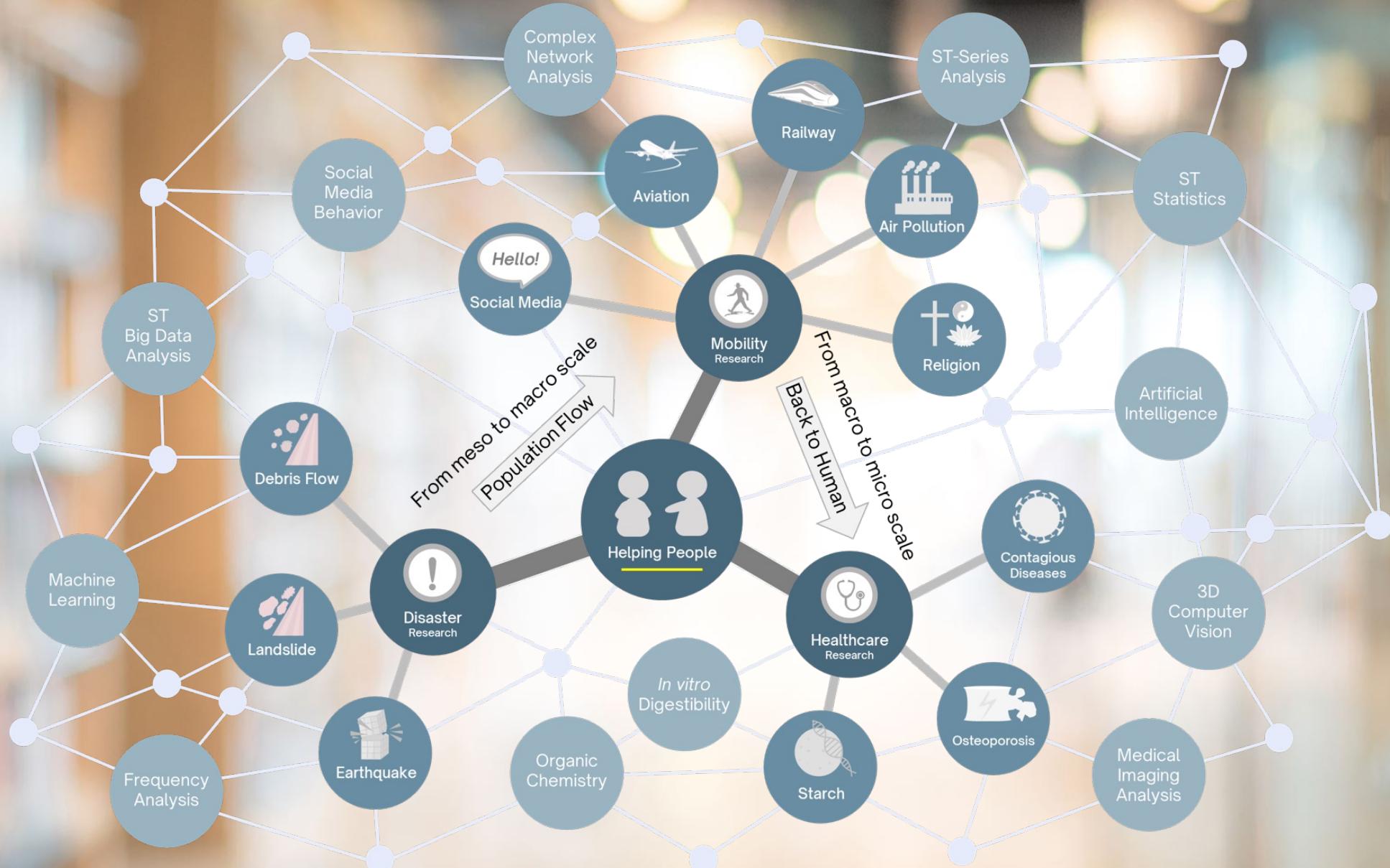
國立臺灣大學地理環境資源學系 碩士

實踐大學食品營養與保健生技學系 碩士

國立臺北教育大學社會與區域發展學系 學士



# Research Interests



# Previous Projects

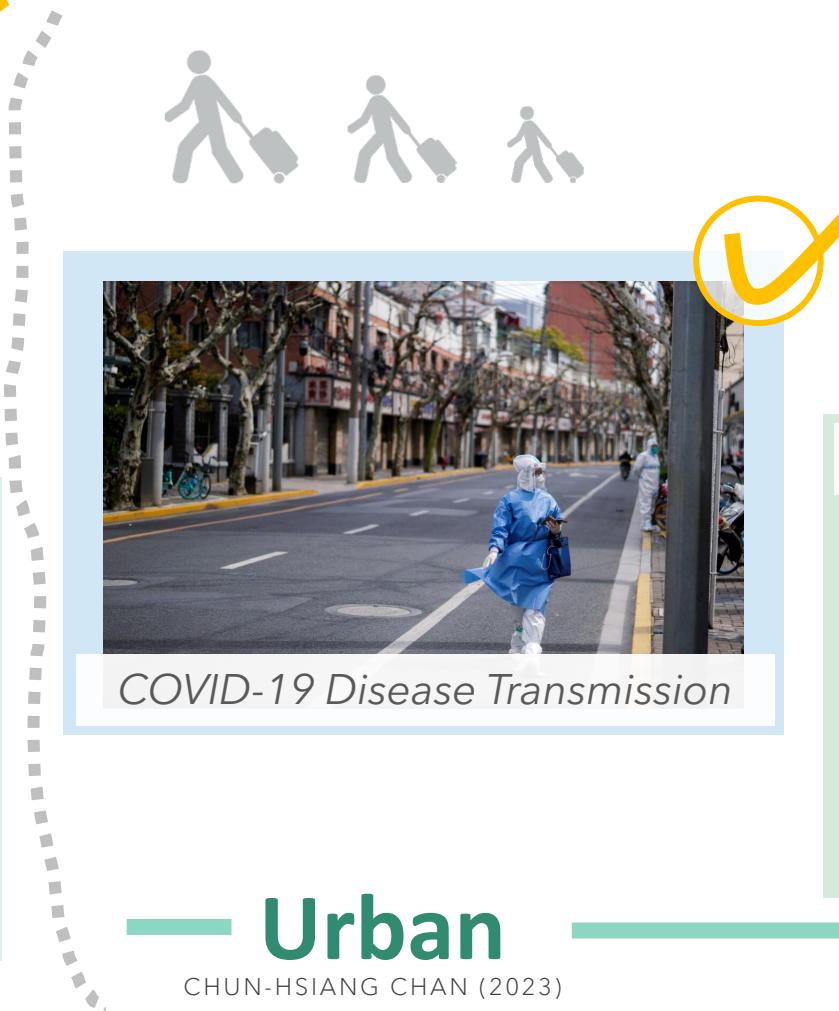
— Global —



Global Airline Alliance Airport Network



Timely Exposure Risk Estimation



COVID-19 Disease Transmission



Social Media Marketing

Spatiotemporal Religious Dissemination

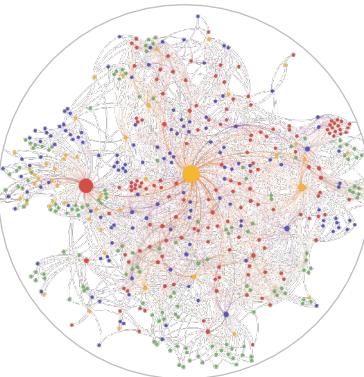


# Other Projects

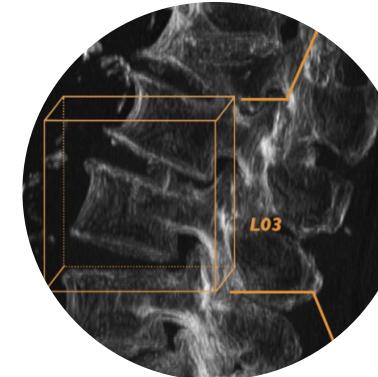
# Disaster Warning AI



## Heatwave Events



# Cybersecurity AI



## Osteoporosis A



CPR AI

# DATARGET



行政法人 國家災害防救科技中心  
National Science and Technology Center  
for Disaster Reduction



 CYFOUNDRY  
台灣資安鑄造公司



廣達電腦  
Quanta Computer



# Other Interests



My first Russian Book | Published in Nov. 2021



Exhibition Staff | Moscow, 2015



Exhibition Staff | St. Petersburg, 2015



Exhibition Staff | República Dominicana, 2015  
Exhibition Staff | Colombia, 2015  
CHUN-HSIANG CHAN (2023)

Русский | Español | 日本語



Host | NTU Russian Night, 2017



ABC news | Paraguay, 2015  
Exhibition Staff | Paraguay, 2015

# Course Intro.

- In the capacity of an urban Geographic Information Systems (GIS) researcher, one is confronted with the formidable challenge of dealing with vast and diverse datasets, some of which may be dynamically generated in real-time (streaming data) rather than being static in nature.
- Consequently, the initial inquiry that naturally arises pertains to the methods and tools available for the processing of "Big Data" or "Streaming Data" within the computational environment.

# Course Intro.



**Python**, being one of the most ubiquitous programming languages, offers an array of pragmatic packages and libraries.

These package resources, meticulously designed and curated, not only expedite the execution of data analytics but also furnish an assortment of sophisticated visualization tools capable of captivating the attention of stakeholders and researchers alike.

# Course Intro.

Week	Date	Content	Week	Date	Content
1	Sep. 4	Course Introduction	11	Nov. 13	Python machine learning II
2	Sep. 11	Python environment establishment	12	Nov. 20	PBL python integration
3	Sep. 18	Python fundamental programming I	13	Nov. 27	Python imaging analysis I
4	Sep. 25	Python fundamental programming II	14	Dec. 4	Python imaging analysis II
5	Oct. 2	Python fundamental programming III	15	Dec. 11	Final Report Presentation
6	Oct. 9	National Day (no class)	16	Dec. 18	Final Exam Week (no class)
7	Oct. 16	Python statistics			
8	Oct. 23	Midterm Exam Week (no class)			
9	Oct. 30	Midterm Proposal Pitch			
10	Nov. 6	Python machine learning I			

# Grading Policy



All you have to do is study hard and feel free to ask question when you do not understand.



I believe that if you fulfill all required items, and then you will pass this course / get a high GPA.



Do mot worry about the grade! The most important things is what you learn from this course.

Attendance	10%
Assignment	30%

Midterm Report	30%
Final Report	30%

# Why do you need to take this course?



- As AloT and 5G development, more and more data streaming sources have been established, but how to analyze these data efficiently and proffer insightful information for stakeholders.

# What will you learn from this course?

- At the beginning of this course, we will teach Python programming with several examples, which could accelerate your learning curve of data preprocessing and data analysis.
- The second part of this course is to introduce some useful and common machine learning algorithms with a little bit of mathematics (easy part) and programming (using packages).
- The third part is image processing, which is also a common data source in geography field.



# The End

Thank you for your attention!

Email: chchan@ntnu.edu.tw

Web: toodou.github.io

